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ABSTRACT

It is imperative for a successful program of technological development in urban education to understand the psycho-cultural system of the ghetto and to develop both software and hardware out of an understanding of this system, rather than to impose existing devices and techniques on it. In community-based "Learning Centers", all members of the community--people living, studying, teaching, or marketing--would have the opportunity to become involved in the solution of educational problems. (Author/SP)

The Reading Process and Processed Reading

by Spenser Jameson and Francis A. Ianni*

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In the past five years, industry has provided education with a variety of teaching machines and programs that purport to develop the basic reading skills of children attending schools in the ghetto. The excitement generated by the potential of instructional technology --particularly when joined with learning theory from the behavioral sciences--is widespread. One result of this interest has been an outlay of public and private funds of a magnitude without precedent in American education. Large numbers of youngsters attending schools in the inner-city, however, are still not reading.

Education as a System

The reasons why urban man has been able to send rockets to the moon but unable to teach his children to read are associated with his failure to understand the nature of his urban life or to effectively apply technology to the teaching of reading for ghetto youngsters. In the first instance we have so far ignored the overwhelming evidence that learning is more than situational; it is in fact heavily conditioned by the culture within which it develops. If we rule out, for the moment, the many correlational studies of intelligence and family background or child rearing practices and personality, little systematic study appears to have been given to the child rearing antecedents of cognitive behavior and even less to the development of teaching strategies based upon such knowledge. And yet, if we consider learning as essentially an exploration of alternatives and one of the functions of teaching as the economizing of random activity in such choice, then teaching strategies must take

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into account the fact that the propensity to explore is heavily conditioned by the cultural context within which it takes place. That is to say, every culture produces predisposing factors which develop or inhibit the child's drive to explore and to consider alternatives. An adequate pedagogy then must understand these factors and develop an instructional system which builds upon or vitiates the predisposing factors.

The present mode of so-called diagnostic teaching illustrates the point. This teaching strategy, which places strong emphasis on individualized instruction, posits certain optimal conditions for instruction: (a) that the teacher operate within a system which identifies and exploits the antecedent experience^s which predispose a child to learn; (b) that the information to be transmitted be carefully structured for optimal comprehension and presented in a properly programed sequence; and (c) that the system comprehend the nature and placing of rewards and punishments. The cultural context is a critical, though largely overlooked, factor in the operation of this strategy. Obviously such elements as the degree of intellectual stimulation the child receives from his family, the value his society places upon learning, and the richness of his cultural environment will influence his predisposition to learn. But the structure of knowledge and the mode of presentation are equally dependent on cultural factors. We see, for example, the difference in instructional modes between our own and primitive societies: We teach the young by telling about an action--abstracting out of context; they instruct by showing the action itself. Finally the numerous

examples of cultural differentiation of rewards and punishments are as obvious intra-culturally from class to class as they are cross culturally.

Just as damaging, however, has been our failure to view educational technology as the product rather than the revolutionizing force of the learning process in urban areas. For all of our talk about a systems approach in education we continue to search for that single revolutionary device or technique which will make it possible to teach all children to read quickly, efficiently and painlessly. We scurry around trying to adapt this piece of industrial hardware or that academically developed strategy of instruction to urban education without ever actually looking at the systematic relations which make education work. Education has rarely been examined in this systematic fashion, particularly by educators. In fact, while there have been some studies on social climate in the schools, most research has concentrated on the learner as part of that system and, in recent years, on what is taught in that system. Little attention has been given to the total organizational structure of education viewed as a system and even less to an analysis of the structure as a device for administrative or management training. What is necessary here, and what this paper is intended to suggest, is that just such a theoretical framework must be employed if we are to understand and manage educational affairs as a system.

Each of the behavioral sciences has now adopted a systems approach which looks at behavior as part of a relational pattern of elements rather than as a series of discrete acts. Whether

it is the structural analysis of kinship systems, a behavioral gestalt or a social system, the same intellectual methodology is applied. Elements in constant dynamic relationship cannot be fully understood in isolation from that interaction because constancy is an illusion when human behavior is properly seen as a series of interactions. Applied to education, the systems approach suggests an analysis of a total system of related organizations, behaviors and outcomes rather than the separate analyses of curriculum, administration and teaching. In part this new approach derives from the practical experience of educators who have seen the failure of piecemeal attempts to improve education and have come to appreciate the relational interdependence of the educational system. The very promising curriculum revolution of the 1950's and the 1960's was far less successful than it might have been because it had as its motive and its mode the improvement of education through the improvement of one component--and only one component of the system--the curriculum. There is now ample evidence that modifying the curriculum is a necessary but insufficient step in school improvement unless there are concomitant changes in the rest of the system.

In sum, these are the imperatives for a successful program of technological development in urban education: understanding the psycho-cultural system of the ghetto and developing both software and hardware out of an understanding of this system rather than imposing existing devices and techniques on it. Failure to adhere to these imperatives explains in most cases technology's inability to make any dramatic change in urban education. Nowhere is this more obvious than

in the transformation of the reading process into processed reading.

The Challenge of "Bootleg" Education

Before exploring some of the ways instructional technology can be applied to the teaching of reading, it would be useful to look at a program that has been able to teach deprived youngsters how to read. Without books, programed materials, teaching machines or even trained teachers, a group of youngsters in the East Harlem and Harlem communities of New York City were taught to read by men who themselves had failed in or dropped out of school--men who might be called "bootleg educators."

With just the teachings from the Koran and some written lessons that emphasized Afro-American history and the dignity and importance in being black, youngsters ranging in age from eleven to seventeen were motivated to learn to read 42 lessons. An alphabet and number system were incorporated into the program. The young people were given the alphabet, words beginning with every letter (e.g. "J is for Justice or just ice") and, through a cross-referencing system to numbers which corresponded to the 26 letters, proper Islamic names beginning with each letter in the alphabet. In order to be admitted to a special peer group, a youngster memorized the words and names for each letter and number, and read and memorized the 42 lessons. When this was accomplished, the youngster obtained his Islamic name by using this coded system and joined the Five Percenters --one of the many splinter groups which came into being after the assassination of Malcolm X.

A by-product of this initiation procedure was that many youngsters whom schools ^{had} labeled functional illiterates learned to read. When pupils in one classroom who had scored below 4.0 on the California Achievement Test viewed a filmstrip on civil rights, several were consistently able to identify and pronounce correctly words like "militant," "exploit" and "heritage." In a discussion which followed the film, they were able to articulate the views of black militant groups in an intelligent and forceful manner. Measured by the standardized test, these youngsters were not prone to learning. Yet they were learning in a bootleg fashion from the preachers of the street, many of whom use the miseries of the poor to further their own ends.

Has instructional technology with its machines and programed systems met the challenge of the bootleg educators in teaching the inner-city child how to read? If so, how? If not, why not?

When one teaching machine was placed in a school with youngsters from an inner-city ghetto, the students were at first fascinated--fascinated with the fact that they had a machine that looked like a television set with all kinds of buttons they could push to make the picture move backwards and forwards. As the teachers and students began to use the program, however, not only did the content disinterest them, but the fascination of pushing all the buttons wore off. The content, a modified version of material developed in the 1940's, presented life in the country--cows, chickens, and the kinds of experiences which elicit neither recognition nor interest

from inner-city students.

Many companies are making an effort to focus software text and illustrations on the interests of the urban student. This is needed, but is it enough? When compared with the "teaching strategies" underlying the bootleg education described above, the effort represents merely an adaptation of traditional middle-class learning modes to an essentially different culture. Though frequently successful in the environment for which they were originally designed, these teaching materials and strategies, however modified, fail in the ghetto classroom.

The difficulty lies in the very process of materials development. Education companies are made up of people living in relatively affluent areas of the city or suburbs and working in mid-town offices. They may make occasional visits to the ghetto and its schools or bring somebody from the ghetto into their office, pump him, and then design programs which, they assume, will meet the needs of the youngsters lacking in reading skills.

The bootleg educators, on the other hand, came from the same environment as their "students." They were from the ranks, often the same age as the young people they taught, and succeeded in gaining membership in the organization by learning the same 42 lessons they taught. A perpetual each-one-teach-one approach was used much along the lines of Laubach's adult literacy techniques. The curriculum designers and programmers, as well as teachers who live outside their students' neighborhood and know little about the life styles of the youngsters, will have difficulty matching the effective-

ness of the person who is familiar with their needs and has their respect as one who understands their problems because he has himself risen above similar ones.

Companies can hire people from inner-city ghettos to fill decision-making, writing and research positions by establishing criteria other than academic training. At present a few companies are considering the possibility of setting up independent black companies to produce software--with no strings attached. Like the development of more relevant content, these are effective and necessary trends, but again limited in comparison with the bootleg educator's approach. For even when companies embarking in new directions of instructional technology involve ghetto residents in materials development, they follow traditional publishing procedures which, to date, have failed to translate the learning methods at work in the street into marketable materials. The traditional procedures entail the design of software as a final product to be marketed in the classroom. Periodic revisions are sometimes scheduled, but contact between the classroom and the company is largely limited to an initial teacher-training session on how to operate the equipment and administer the materials. Occasionally materials are pretested in the classroom and modified to suit students' needs. But once again, the company modifies rather than develops materials for the inner-city student.

These many problems concerned with developing effective reading materials for the inner-city pupil are further complicated by the stark fact that the few programs and equipment which have evidenced some measure of success are too expensive for most schools

to purchase. The result is that teachers are forced to use less expensive instructional aids which still utilize the traditional content that has failed to teach many inner-city children how to read. Beyond this, large numbers of schools located in the inner-city have anachronistic facilities that are not readily adaptable to newer systems of instructional technology.

Meeting the Challenge: Community Learning Centers

Education companies can, however, break out of an approach which uses the classroom merely as a sales outlet for materials. They can tap the bootleg educator's techniques and involve poor readers in the reading process--rather than merely processing traditional reading materials through new equipment. And further, this can be done at a cost within the reach of school systems and community centers.

The large industrial combines that purport to turn out all kinds of educational materials can become active members in centers of learning, based in the inner-city, where business and industry, local colleges and university schools of education, public school administrators and teachers, and parents, students, "drop-outs" and other residents of the community can meet together. In these community-based "Learning Centers," all members of the community--people living, studying, teaching or marketing--would have the opportunity to become involved in the solution of educational problems. They would learn from each other and learn together.

From the company's point of view, the value of a learning center, in terms of the quality of resulting products, new markets and profit margins, would depend to a great extent on how much each

company brought to, and was willing to learn from, the centers.

Nevertheless, some possible outcomes can be suggested:

- Companies would begin to understand the needs and learning styles of inner-city students and, on the basis of this understanding, develop software which was relevant to the observed needs of inner-city students.
- Companies would simulate the kind of individualized instruction offered by the Five Percenters by structuring relevant content into programed materials and other self instructional aids which a student could use at his own pace.
- Companies would design some software components as "core programs" for mass production and national marketing. The programs would teach basic skills at all levels and provide a model for supplementary materials which teachers and students could develop to suit their unique reading skills and motivational needs.
- Companies would develop training designs for on-site workshops and training materials which would instruct teachers, community people and high school students on ways to develop the above components.
- Companies would train and license individuals to perform technical services needed in the operation of technological instructional programs (e.g. coding machine instructions, taping audio scripts, developing slides, etc.).
- Companies would provide students with "tools," such as

tape recorders and still and motion picture cameras, to collect and create content material of interest to them, for use in their own reading instruction. This raw material would be adapted for software to be used in other urban schools by students with similar reading skill deficiencies and content needs.

Axiomatic to responsible leadership in the world of instructional technology is the idea that the teacher is not to be replaced but situated in a new position where his talent as a teacher and person may come to full fruition. It is nevertheless true that a major obstacle to the full execution of many programs lies in the resistance that many teachers put up to automated technology. One of the weaknesses of current reading programs is that teachers did not participate in the development of the materials--and consequently are not actively involved in administering them. Representatives of educational companies, participating at community-based learning centers as both learners and specialists, could help alleviate teachers' fears of automation by involving them in a variety of orientation and training programs.

In addition to involving teachers in the potential uses of instructional technology, companies participating in learning centers would work with educators on curriculum development, diagnostic testing in local schools and special educational projects in after-school centers, and adult training. The companies would have the opportunity not only to learn about needs and future markets but also to begin

orienting school personnel to more innovative approaches in education. Through demonstration projects and teacher workshops conducted at learning centers, new methods in teaching reading could be introduced into the school system. From the initial stages, learning center programs would utilize and coordinate resources of the major segments of the community. For example, businessmen and educators together would adapt remedial and adult basic literacy skills to practical, job-related reading situations; specialists in instructional technology would work with university schools of education in developing techniques of teaching reading skills with various types of teaching machines and devices.

Each segment of the community would contribute in its area of specialty and at the same time learn from the others. Universities would provide testing and evaluation services as well as teacher training in subject areas. Business and industry would consult on management techniques, fund programs, and conduct special training and orientation to the world of work for young people. The public schools would make needs known, refer pupils and evaluate the effectiveness of new media.

Community parents and young people would define "relevant" approaches and collect raw content material. This latter contribution merits further clarification.

Materials by the Student for the Student

In much the same way that teachers often resist the idea that machines and self-contained materials can be effective teaching tools, experts in the development of educational devices and self-instructional

materials sometimes resist the idea that teachers--and even students--can develop materials for themselves. Evidence attesting to the feasibility of this approach, however, is offered by the experience of the Community Resource Center of the Horace Mann-Lincoln Institute where during the past year elementary and high school students and high school drop-outs with poor reading skills have been developing their own reading improvement materials.

Small teams of students from our film workshop, using still and motion picture cameras, take pictures of people and things that interest them. These pictures serve as the starting point of a reading program. As the photographers look over their pictures, they describe and label them. Descriptions are written or recorded on tape, thus enabling nonliterate students to be immediately involved in the activity. Community residents working as tutors and teachers transcribe the materials for reading. Sequenced on film strips, pictures can also serve as short stories or episodes for discussion and/or reading.

Simple reading skills are developed as students identify elements of the picture or suggest titles for them. At a more advanced reading level, the pictures become the source for fiction and non-fiction reading materials. The student himself may interpret the pictures, thus determining the actual content of the materials. The teacher thus works from student-written materials which are immediately relevant to the students.

Specialists in educational technology could adapt such student-made products for use in teaching machines, audio visual aids, or

self-instructional programs. To carry this proposition one step further, older students could be hired by educational companies and trained to adapt the materials themselves.

These materials, combined with instructional equipment, could form a package that not only would help meet the need for meaningful reading instruction, but would also cope with the problem of the prohibitive cost of computer-based instruction and the complex set-ups for which our schools are currently unprepared. Computers in current use range in cost from \$60,000 to over one million dollars including limited software. Compare this to the cost of our proposed package--\$150 to \$200 for a 35mm camera, a small portable tape recorder and an 8mm or 16mm movie camera--and meaningful contact developed by students, to serve as the basis for a reading improvement program. This is clearly within the means of any school system. The package would be small, lightweight and portable and would embody the much needed versatility and flexibility.

The learning center would in effect represent the practical application of the systems approach to education. Through close proximity and day-to-day confrontation at the center, the various elements of the education system--community life, students, parents, teachers, administrators, instructional systems, media, and the corporate producers of materials--would be sensitized to their mutual existence and interrelationship. Once conscious of this interrelationship, they (and especially those concerned with improving instruction) could exploit it for the purpose of generating new methods and materials

that would be effective and acceptable to the various parts of the system. Curriculum would emerge out of the needs of students; teachers and administrators would observe its effectiveness and learn to use it; companies would translate it into marketable materials with demonstrated effectiveness and acceptability.

In addition, the community-based center would help to redress an imbalance in the system. The psycho-social factors of the inner-city, too often ignored or misunderstood by educational planners, would come into full play at the center. Through company cooperation with community parents, teachers and students and through the creation of raw material by young people themselves, community styles and needs would have their impact on final products, products that would build the reading process into effective processed reading.